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NEW THYSANOPTERA FROM FLORIDA—IV.

J. R. WATSON

53. *Trichothrips brevitubus* n. sp.

Measurements: Head, length 0.187 mm., width 0.2 mm.; prothorax, length 0.115 mm., width 0.3 mm.; abdomen, width 0.4 mm.; tube, length 0.1 mm., width at base 0.064 mm., at the apex 0.032 mm.; total body length 1.17 mm. Antennae: segment 1, 24; 2, 52; 3, 64; 4, 63; 5, 52; 6, 48; 7, 46; 8, 26 microns; total length 0.39 mm.

Color, including legs and tube, brown, head and abdomen very dark brown. Antennae entirely bright yellow except segment 8, which is light brown.

Head nearly square in general outline, a little wider than long, sides convex, an acute projection between the bases of the antennae. The only prominent spine is the post-ocular which is about 26 microns long. Like all the other spines on the body it is dark brown and ends in a small colorless knob. Eyes rather small, about nine facets showing in lateral profile which occupies about two thirds of the margin of the head, not protruding, black. Ocelli inconspicuous, posterior pair situated far forward opposite the anterior .2 of the eyes whose margins they touch, widely separated. The anterior one points forward, color very dark. Mouth cone long and tapering, reaching a trifle beyond the posterior margin of the prothorax. Antennae twice as long as the head, 8-segmented, spines and sense cones rather short, especially on the basal segments, all colorless and inconspicuous.

Prothorax broad and short, approaching a semi-circular outline, sides convex and sharply diverging posteriorly, a long (81 microns) heavy spine near each posterior angle, each angle provided with a single shorter spine.

Pterothorax with sides convex and slightly converging posteriorly, without prominent spines. Legs moderately long and slender, without prominent spines. Wings rather short, membrane not reaching the end of the abdomen, fringed with long hairs that reach little beyond the end of the tube.

Abdomen wide and short, about a third longer than broad, bearing a few dark spines which become long and heavy posteriorly. Tube but little more than half as long as the head. The longest of the terminal bristles about equal to the length of the tube.

Described from a single female brot to the author by the janitor of the

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experiment station building with the statement that he extracted it from his eye where it was very painful, causing a much more severe smarting than a gnat.

Gainesville, Fla., August, 1918.

Type in the author's collection.

The following key will enable one to separate the North American species (except *T. semicaeus* the description of which, in Uzel, is too brief) which are now (see Hood in Entomologist, Vol. XLVIII, No. 624, May, 1915, p. 106) placed in the genus Trichothrips. Moulton's key (U. S. D. A. Bur. Ent. Tech. Ser. 21) has been followed for the species there given.

KEY TO THE SPECIES OF TRICHTHRIPI OF NORTH AMERICA

- I. Prominent spines on body with blunt or dilated tips; most forms very dark brown or nearly black (except *T. angusticeps*), usually with short wings (except *T. longitubus*).
 - a. Each fore tarsus armed with a tooth; antennae about 1.7 times as long as head; total body length about 1.5 mm.
T. angusticeps Hood.
 - aa. Fore tarsi not armed; antennae about twice as long as head.
 - b. Wings fully developed; body length about 1.8 mm.; tibiae, tarsi, and intermediate segments of the antennae bright lemon yellow; tube fully as long as the head.
T. longitubus Hood.
 - bb. Wings short; body length about 1.2; whole antenna clear yellow; tube about half as long as the head.
T. brevitubus n. sp.
- II. Prominent spines on body acute; antennae about twice as long as head.
 - a. Individuals small, about 1 mm. in length, without ocelli or wings.
 - b. Eyes reduced, lateral profile showing but three facets; first segment about half as long as the second.....*T. smithii* Hood.
 - bb. Eyes small but normal; first antennal segment nearly as long as second.*T. flavicauda* Morgan.
 - aa. Individuals rather large, 1.5 mm. or more, wings fully developed or brachypterous.
 - b. Each fore tarsus armed with a tooth.
 - c. Antennae 1.75 times as long as head; tube .7 as long as head; total length about 2 mm., fore tarsi with a short, stout tooth.*T. ambitus* Hinds.
 - cc. Antenna slightly more than twice as long as the head; tube slightly shorter than head.
 - d. Total body length about 1.7 mm.; fore tarsi with a small acute tooth; wings light gray brown, spotted with darker.*T. americanus* Hood.
 - dd. Tarsi with a large tooth.
 - e. Last two antennal segments completely united; eyes very small; body length about 1.5 mm.*T. anomocerus* Hood.

ee. Last two antennal segments not compactly united; eyes normal; body length 1.8 mm. or more.

f. Tarsal tooth straight.

T. marginalis Hood & Williams.

ff. Tarsal tooth curved.

T. terminalis Hood & Williams.

bb. Tarsi unarmed. *T. zonatus* Hood.

MEGALOMEROTHRIPS, gen. nov.

Head considerably longer than wide; cheeks with a few stout bristles but without warts; antennae about twice as long as the head, 8-segmented, intermediate segments elongated. Mouth cone about as long as width at the base which is swollen to a diameter considerably greater than the width of the head; labium rounded but labrum sharp-pointed, reaching nearly to the mesosternum; fore femora enlarged, without teeth; tarsi without teeth. Wings short and weak, not narrowed in the middle. Tube long and slender.

Type *M. eupatorii* n. sp.

54. *Megalomerothrips eupatorii*, n. sp.

Measurements: Total length 2.1 mm.; Head, length 0.31 mm.; width 0.23 mm.; Prothorax, length 0.24 mm, width (including coxae) 0.43 mm.; mesothorax, breadth 0.40 mm.; abdomen, breadth 0.46 mm.; tube, length 0.34 mm., width in the middle 0.08 mm. Antennae: segment 1, 59; 2, 68; 3, 148; 4, 118; 5, 88; 6, 71; 7, 58; 8, 43 microns; total 0.62 mm.

Color an almost uniform light brown; posterior segments of abdomen darker and segments 2 and 3 of antennae very light yellow, 3 almost colorless as are the last tarsal joints.

Head subquadrangular in outline, about $\frac{1}{2}$ longer than wide; frons but slightly convex; cheeks nearly parallel, but slightly convex, provided with a few short thick spines; post-ocular bristles rather long, exceeding the eyes; dorsal surface of head with faint cross-striations. Eyes rather small, not protruding, black. Ocelli prominent, all facing upward; posterior pair opposite the middle of the eyes but not touching their margins. Mouth cone about as wide as the width at the swollen base, labrum tapering to a point, exceeding the labium and nearly reaching the mesosternum. Antennae 8-segmented; segment 3 long and almost colorless; sense cones and bristles colorless and inconspicuous.

Prothorax shorter than the head; wide; sides sharply diverging posteriorly and very convex; posterior angles very rounding, provided with moderately long but colorless spines with blunt tips.

Pterothorax; sides nearly straight, converging posteriorly; a pair of stout short spines about the middle of the mesothorax. Legs moderately long, concolorous with the body except for the colorless last joints of the tarsi. Fore femora greatly enlarged, $\frac{3}{4}$ as wide as the head. Wings very short and weak, not nearly reaching the base of the tube; fringed with rather short hairs, about 20 interlocated ones.

Abdomen elliptical in outline, no bristles on anterior segments but heavy ones on the posterior ones, the longest exceeding the tube. Tube longer than the head, narrow with almost parallel sides, tipped with a few spines which are only slightly more than half the length of the tube.

♂ unknown.

Described from a single female taken by beating *Eupatorium ageratoides* in bloom. Nov. Gainesville, Fla. Type in the author's collection.

The following key will enable one to separate the new genus from the others of section 2 of the Phloethripidae (Moulton Bul. 21 Tech. Sc. Bur. Ent., U. S. D. A.), comprising those genera in which the head is considerable longer than wide and longer than the prothorax. This is not a very good character on which to divide the family, as it divides at least one genus (*Haplothrips*), but it is a convenient one, and much used.

KEY TO THE GENERA OF PHLOETHRIPIDAE

II. Head considerably longer than wide and longer than the prothorax.

- a. Head less than twice as long as wide.
 - b. Fore femora with a tooth on the inner side near the end. In our species the fore femora are enlarged but the intermediate antennal segments are not elongated.
Acanthothrips, Uzel. (*Hoplothrips*).
 - bb. Fore femora unarmed, in the female, at least.
 - c. Wings wanting, reduced to pads, or very short and weak.
 - d. Mouth cone shorter than its width at the base, labrum with a blunt tip.*Cephalothrips* Uzel.
 - dd. Mouth cone as long as width, labrum sharply pointed.
 - e. Cheeks with spine-bearing warts.
Malacothrips.
 - ee. Cheeks without spine-bearing warts.
 - f. Intermediate antennal segments not elongated. Fore femora not greatly enlarged.
 - g. Cheeks parallel, fore tarsi armed with spines.
Neothrips Hood.
 - gg. Cheeks arched, fore tarsi unarmed.
Gnophothrips Hood & Williams.
 - ff. Intermediate antennal segments elongate, fore femora greatly enlarged. *Megalomerothrips*, gen. nov.
 - c. Wings fully developed.
 - d. Wings constricted in the middle.
 - e. Mouth cone broadly rounded at the end.
 - f. Cephalic bristles normal.

- g. Wings only slightly narrowed in the middle; head length more than 1.5 times the breadth; fore tarsi unarmed.
Cryptothrips Uzel.
- gg. Wings distinctly narrowed in the middle; head length less than 1.5 times the breadth; fore tarsi with a tooth.
Haplothrips (in part).
- ff. One pair of cephalic bristles (not including the post-ocular) much elongated.
 - g. Post-ocular bristles elongated; anterior margin of prothorax semicircular, emarginate and greatly thickened.
Dichaetothrips Hood '14.
 - gg. Pair of bristles laterad of median ocellus elongated; anterior margin of prothorax normal. *Diceratothrips*.
- ee. Mouth cone acute at the tip; wings considerably narrowed in the middle, like a sole.
 - f. Head nearly twice as long as wide; mouth cone reaching nearly across prosternum. *Leptothrips* Hood.
 - ff. Head only a little longer than broad.
 - g. Mouth cone reaching only to middle of prosternum.
Zygothrips Uzel.
 - gg. Mouth cone reaching across prosternum. *Phyllothrips*.
- dd. Wings of equal width thruout.
 - e. Cheeks with a few very small warts, each of which bears a small spine.
 - f. Cheeks nearly straight.
Gynaikothrips.
 - ff. Cheeks arched.
 - g. Post-ocular bristles long and conspicuous; fore femors of ♂ with two teeth near apex.
Hoplandrothrips.
 - gg. Post-ocular spines lacking.
Phloeothrips Haliday.
- ee. Cheeks without such warts.

- f. Fore femora not enlarged.
- g. Mouth cone acute.
 - h. Tube short; eyes prolonged on ventral side of head; a pair of long bristles on vertex at inner angles of eyes; intermediate antennal segments obliquely truncate at both base and apex.
- hh. Tube, eyes and cephalic bristles not as above; antennal segments normal.*Liothrips* Uzel.
- gg. Mouth cone blunt; individuals very large.

Polyphemothrips
Hood and Williams.

- ff. Fore femora greatly enlarged.

Horistothrips Morgan '13.

55. *Frankliella tritici* (Fitch). THE GRAIN THIRPS.

A single specimen of the typical species as distinct from the common varieties was swept from *Eupatorium ageratoides* in November 1918. The antennal segments 2 are typically symmetrical and the measurements agree closely with those given for the species. The specimen is, however, almost colorless except for the eyes, and the bristles in front of the ocelli are very small. This is the first specimen of the typical species the writer has seen from Florida.

MODERN BEEKEEPING*

By FRANK STIRLING

One of the most fascinating pursuits and one that has shown a remarkable degree of expansion during the past few years is beekeeping. As in the case of other lines of endeavor, the tendency is more towards specialization. Authorities, such as Henry Alley, G. M. Doolittle and Frank C. Pellett, have found that, in order to develop beekeeping up to its present state of perfection, careful selection of the Queen Bee was necessary. The queen bee is the foundation of the community, or colony, because she is eventually the mother of all the bees in the hive. It is therefore necessary that she be vigorous, a rigorous egg layer, and like race horses, well bred.

There are many species of bees. During spring and summer

*Read before the Florida Entomological Society on Dec. 30, 1918.